REMARKS

In order to advance the prosecution of this application, Applicants are canceling Claims 28 and 29 and adding new Claims 30-41.

New independent Claim 30 is directed to an apparatus for forming a thin film on each of a plurality of substrates. New independent Claim 40 is directed to a method for preparing a plurality of photomask blanks, the method involving use of a claimed apparatus.

In each of these independent claims, the apparatus comprises a conveyer for conveying the plurality of substrates one by one for introducing each of the substrates into the sputtering chamber. The conveyer is to introduce each of the plurality of substrates into the sputtering chamber by conveying one substrate at a time so that both the sputtering time for carrying out the sputtering for a substrate and the interval time, which runs from an end of sputtering for one substrate to a start of sputtering for next substrate, are respectively made constant. In other words, for the claimed invention, the time for sputtering as well as the interval time is maintained constant, respectively. The result is a continuous process. This feature is shown, for example, at page 13, ln. 24 - page 14, ln. 5 of the specification of the present application.

More preferably, the apparatus comprises a load lock mechanism as recited in dependent Claims 31, 32 and 41. Support for such a load lock mechanism is shown, for example, at page 14, ln. 27 - page 17, ln. 12 of the specification of the present application. Such a load lock mechanism allows for continuous introduction of each substrate one by one into the sputtering chamber which is usually under reduced pressure.

The claimed apparatus and method, involving handling of each substrate continuously one by one, are highly advantageous. As explained in the specification of the present application (e.g. page 14. ln. 27 to page 15, ln.17), a conventional load lock mechanism of a film forming apparatus

accepts a plurality (e.g. ten) of substrates at one time from a view point of throughput, and, after evacuation of the load lock chamber, provides them into the sputtering chamber in turn. With such an apparatus, even though the film forming time for each of the substrate could be controlled, and even if the interval time is substantially the same among these ten substrates, the interval time for the film forming for the next substrate (i.e. the eleventh substrate) will not be the same, since another set of ten substrates must be loaded and introduced in the load lock mechanism for evacuation. As a result, the substrates are not continuously supplied to the sputtering chamber at a continuous interval.

The present inventors have found that even such a subtle differences in condition, which occurs not during the film formation but occurs between the film formation, will affect the quality of the film to be formed, such as for example in dispersion of the phase angle and transmittance deviation, among the photo mask blanks manufactured by the apparatus. However, with the apparatus and method of the claimed invention, such fluctuation is effectively suppressed among the films formed on each of the substrates, which remarkably increases the yields. Hence, the apparatus and method of the claimed invention are highly advantageous over the prior apparatus and methods.

Support for the other new claims is shown, for example, for Claim 35 at page 20, lns. 11-15; for Claim 36 at page 20, lns. 11-15 and in the Examples (e.g. page 24, ln. 10); and for Claims 37 -39 at page 18, ln. 27 - page 19, ln. 11, of the specification of the present application.

Accordingly, it is respectfully requested that these new claims be entered and allowed. If any fee should be due for these new claims, please charge our deposit account 50/1039.

Applicants will now address each of the Examiner's rejections in the order in which they appear in the Office Action.

Claim Rejections - 35 USC §102

In the Office Action, the Examiner rejects Claim 28 under 35 USC §102(e) as being anticipated by Carcia et al. (US publ. 2002/01975090). This rejection is respectfully traversed.

While Applicants traverse this rejection, in order to advance the prosecution of this application, Claim 28 is being canceled without prejudice or disclaimer, rendering this rejection moot. Accordingly, it is respectfully requested that this rejection be withdrawn.

New Claims 30-41 are not anticipated by Carcia. For example, Carcia does not appear to disclose or suggest anything regarding conveying the substrate into the sputtering chamber, and certainly nothing regarding time control for film forming and intervals, as in new Claims 30-41. Hence, Carcia does not disclose or suggest the invention of Claims 30-41, and these claims are patentable thereover.

Claim Rejections - 35 USC §103

The Examiner also has the following rejections under 35 USC §103(a):

A. Claim 28 is rejected as being unpatentable over Tu et al. (US 5,714,285) in view of Namiki (US 6,286,452) and Takeuchi (US 4,096,026).

B. Claim 28 is rejected as being unpatentable over Carcia in view of Namiki.

C. Claim 29 is rejected as being unpatentable over Tu in view of Namiki and Takeuchi and further in view of Baldwin et al. (US 6,419,802).

D. Claim 29 is rejected as being unpatentable over Carcia in view of Namiki and further in view of Baldwin.

Each of these rejections is respectfully traversed.

While Applicants traverse these rejections, in order to advance the prosecution of this application, Claims 28 and 29 are being canceled without prejudice or disclaimer, rendering these rejections moot. Accordingly, it is respectfully requested that these rejections be withdrawn.

New Claims 30-41 would not have been obvious in view of these references. For example, none of the references appear to disclose or suggest anything regarding conveying the substrate into the sputtering chamber, and certainly nothing regarding time control for film forming and intervals, as in new Claims 30-41. Hence, the cited references do not disclose or suggest the invention of Claims 30-41, and these claims are patentable thereover.

Conclusion

It is respectfully submitted that the present application is in a condition for allowance and should be allowed.

If any further fee is due for this amendment, please charge our deposit account 50/1039.

Favorable reconsideration is earnestly solicited.

Respectfully submitted,

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